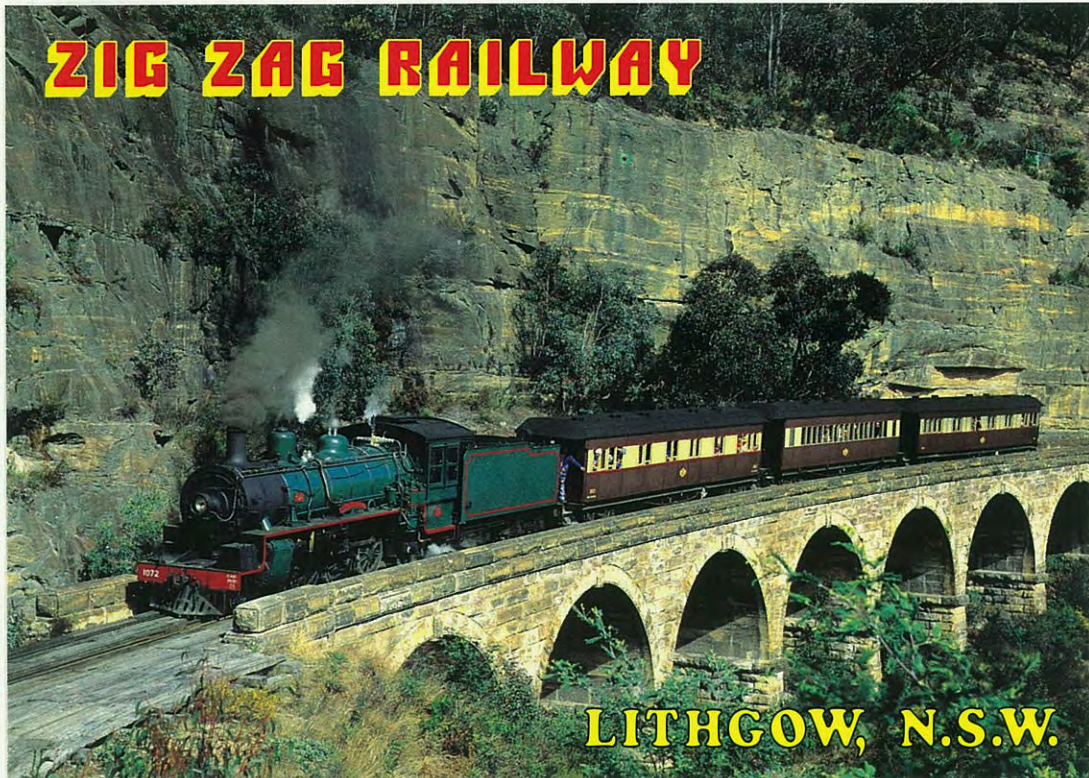


REPORT

on

the plaquing of



as a

NATIONAL ENGINEERING LANDMARK

on the 123rd anniversary of its opening

18th October 1992



Engineering Heritage Committee
Sydney Division
Institution of Engineers, Australia
November 4, 1992.



The set-up inside the loco workshed



The makeshift arrangements with the Institution's banner covering the plaques



Principal speaker was Martin Thomas, immediate Past President of the Institution.



*Unveiling the plaques with the assistance of Michael Forbes, President,
Zig Zag Railway Co-op Ltd*



Unveiling the plaques with the assistance of Michael Foster, President
The Big Railway Co-op Ltd

1 Earst home before the
the public at this
location "for ever"!





The Great Zig Zag 1869 - 1910 as seen c1880



The Great Zig Zag at Lithgow officially declared to be a National Engineering Landmark.

When the new platform at Bottom Points is completed, the plaques will be attached to the sandstone rock face to be seen by passengers immediately they alight from the trains.

To the West, the railway, after the consideration of several alternate schemes involving circling Mt. York, eventually followed the high ridge of the Darling Causeway from Mt. Victoria and it was originally proposed that the line would make its descent into the Lithgow Valley by means of a tunnel. This tunnel was estimated to be about two miles in length and at that time (1866) a figure of \$800,000 was set down as the cost of its construction. The tunnel proposal was abandoned; firstly, because of the enormous cost, the time that would have elapsed during its construction, and the fact that quite a few miles of line through open country could be constructed for the same cost; and secondly, as John Whitton reported at the time, it would be difficult to get a contractor to undertake the work. Accordingly, the zig zag method of descent was decided upon.

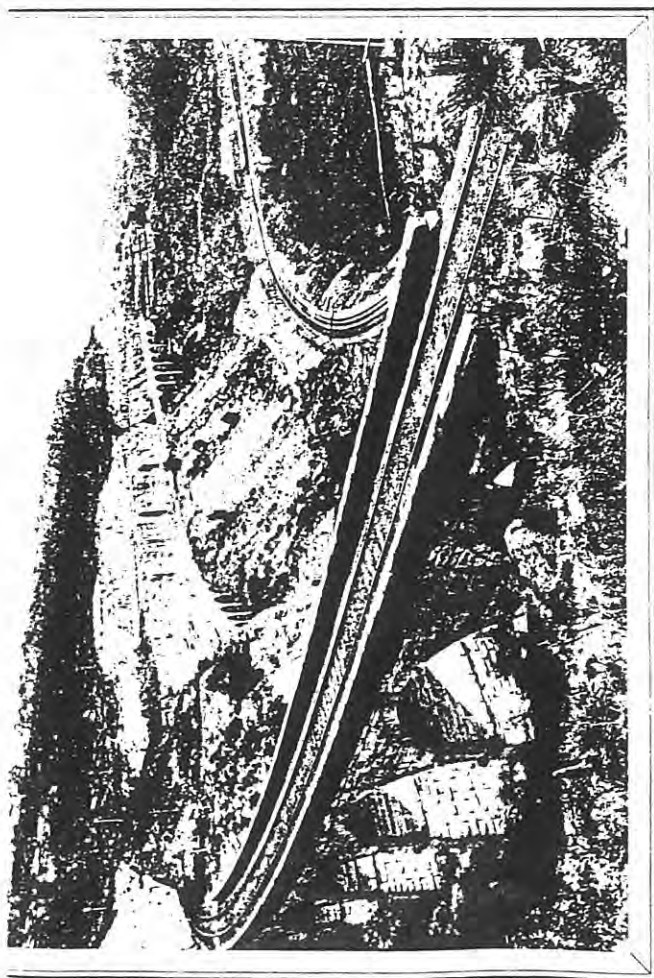
Turning to the accompanying map, it will be seen that the original line left the high ridge near Bell and descended into the valley of Dargan's Creek on a grade of 1 in 50 (which means a fall of one foot for every 50 feet forward travel) and then ascended the other side of the creek for 1 mile 31 chains of stiff grade of 1 in 33 to the eastern portal of the Clarence tunnel. Clarence station, close by the tunnel, was the highest point of the old line (3,658 feet). Relief from the heavy 1 in 50 and 1 in 33 grades in this section was provided in 1897 by the construction of a deviation heading, Dargan's Creek giving 1 in 60 grades (see map). From the western end of the Clarence tunnel, the line for most of the way descended in a continuous grade of 1 in 42 for five miles to the bottom of the Zig Zag, the top wing of which was about 220 feet above the level of the line down in the valley immediately below.

The Great Zig Zag consists of three sections — the "top road", the "middle road", and the "bottom road". Trains proceeded beyond the Top Points an extension or "wing" which terminated on the edge of a cliff overlooking a 200 feet drop. Here the train reversed and in the early days the engine propelled the train down the "middle road" to the bottom "wing", from which position it then proceeded along the bottom road and so on its way to the west. Later in the interests of safety the engine ran round the train and hauled the train all the way. Going in the opposite direction the procedure was reversed. Three very fine stone viaducts are on the Great Zig Zag, all of which are visible to present-day train travellers as trains travel along the line which is now located beside the original line.

The Great Zig Zag was included in a construction contract, beginning near the western end of the Clarence tunnel, and let to Mr. P. Higgins in May, 1866. This section represented one of the heaviest railway works of those early days. In the 15 miles from that point to Wallerawang, there were seven stone viaducts, varying in height from 10 to 70 feet, three tunnels, and nearly 1¼ million cubic yards of excavations, two-thirds through rock. The section was opened for traffic on 18th October, 1869 — a truly remarkable effort.

The working of trains over the Great Zig Zag was always hazardous, great caution having to be exercised on the descent of the middle road, on which there is a 230 feet tunnel. Eventually, traffic became so dense, due to the growth of the system and the loss of time in working over the Great Zig Zag, that consideration was finally given to its replacement. Throughout the last 20 years of the 19th century, many inquiries and investigations were held as to the best method in which to achieve this — several deviations being considered as well as John Whitton's original proposal for a two-mile tunnel — but it was not until 1908 that work was begun on the existing deviation with its 10 tunnels and easier grade.

In the meantime, the density of traffic demanded something should be done at the top and bottom "wings" of the Great Zig Zag as a relief until the new deviation was opened for traffic. With the result that the old top "wing" was abandoned in favour of an extension on a new location, the construction of which involved a sharp curve, heavy rock excavations and earth fillings to a depth of 60 feet, in order to get the required length of line. The bottom "wing" was merely lengthened without any re-location. On 16th October, 1910, the new deviation was opened for traffic and the Great Zig Zag became another historical monument.



SOME HISTORICAL NOTES ON THE GREAT ZIG ZAG

by

R.S. Fookes

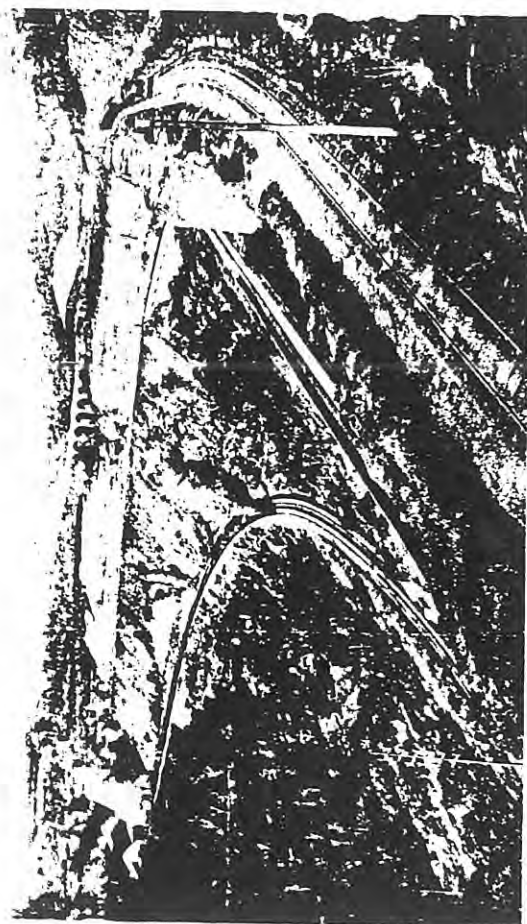
Editor of the Bulletin of the
Australian Railway Historical Society

†††

The Lithgow, or Great Zig Zag, the particular piece of railway engineering that you will see today, was regarded at the time of its construction and for many years after as one of the wonders of the world. Its fame became world-wide and many visitors came from overseas to view it, whilst organised sight-seeing parties made it a favourite picnic spot for many years.

The construction of the railway line over that section of the Blue Mountains, between 1863 and 1869, was fraught with many difficulties. Financial stringency was very much in evidence and agitations were afoot for the cheaper construction of horse tramways along the road leading to the interior of the Colony, consequently the task of the then Engineer-in-Chief, John Whitton, was an unenviable one. Mr. Whitton has been rightly called "the Father of the N.S.W. Railways", for he held the office of Engineer-in-Chief for a period of 32 years (1857 — 1889), during which time he was responsible for the construction of over 2,000 miles of railway, thereby laying the foundations for the present State-wide system.

Because the cost of construction had to be kept to a minimum, the railway line over the mountains was constructed with steep grades and sharp curves, with the elevation on the East and West being achieved by means of zig-zags instead of the tunnels that were originally proposed by the Engineer in Chief. The smaller or "Little" zig zag on the eastern slope of the mountains (opened in 1867) was eventually replaced by a tunnel in 1892 but this, whilst it did away with the necessity for the reversing of trains, did little to relieve the hazards of train working because of its steep grade and bad reverse curves inside the tunnel. Engine crews were at times overcome by gas fumes and smoke, whilst the journey through the tunnel was always regarded by passengers as an ordeal. In 1913 a new deviation, via the Glenbrook Gorge, was brought into use to replace the steep grades and tunnel between Emu Plains and Blaxland.



THE ROUTE FROM CLARENCE TO ZIG ZAG

"Give me the clear blue sky over my head, and the green turf beneath my feet, a winding road before me, and a three hours' march to dinner", writes William Hazlitt, the famous English essayist, when stating his requirements for an enjoyable walk.

It is likely, however, that Hazlitt never had such a winding road before him as you will have to-day on your walk from Clarence to Zig Zag. The illustration above of the Great Zig Zag, which forms the last section of the walk, shows how New South Wales trains once had to swing this way and that to negotiate the steep western slopes of the Blue Mountains.

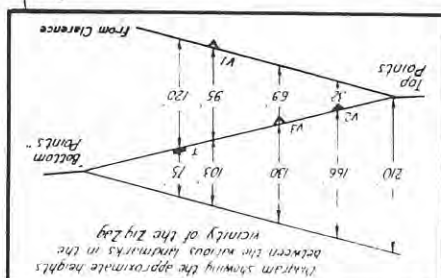
The route from Clarence to Zig Zag is approximately five miles but if you could go "as the crow flies" the distance would only be two miles. This route may be divided into three sections: the first, from Clarence railway station to the eastern end of Clarence tunnel, a distance of about 1½ miles, in which the track rises 200 feet; the second, from the tunnel to "Top Points", a distance of about 2½ miles, in which the track falls 296 feet; the third, from "Top Points" to "Bottom Points" (i.e., the Great Zig Zag) a distance of 67 chains, in which the track falls 101 feet.

You will be impressed by the huge earthworks along this route in the form of cuttings, embankments, tunnels, and viaducts. These works were performed in the three years prior to 18th October, 1869, when the line was opened for traffic. Thereafter trains were operated over the Great Zig Zag for 41 years, i.e., until 16th October, 1910, when it was abandoned in favour of the existing route.

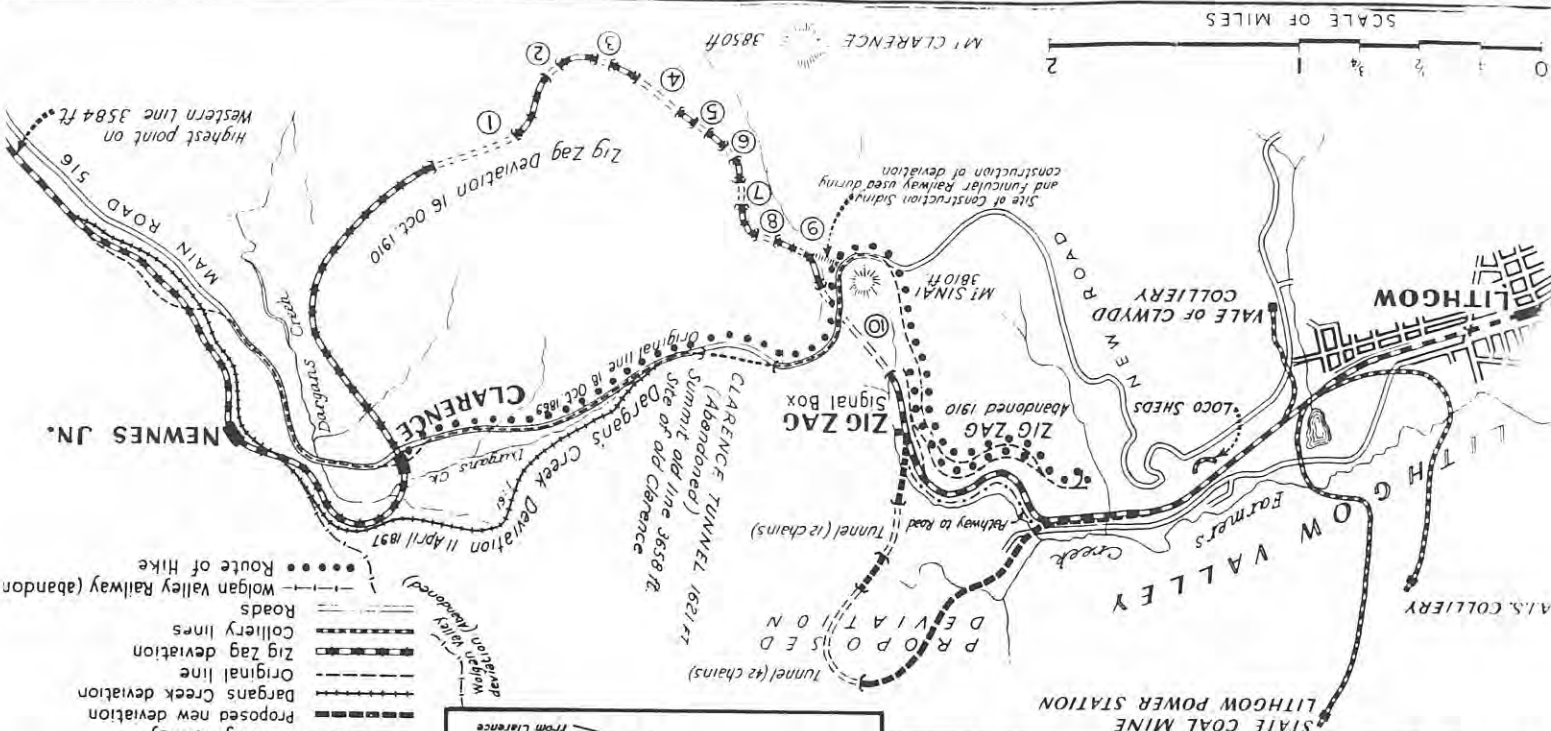
You will have five hours to complete the five-mile walk to Zig Zag. As a consequence there will be ample time to have a picnic lunch on the way, to note the points of historical interest, and to admire the magnificent Blue Mountain scenery.

WALKING TOUR MAP SUMMARY showing old and new railway lines between NEWNES JN. and LITHGOW

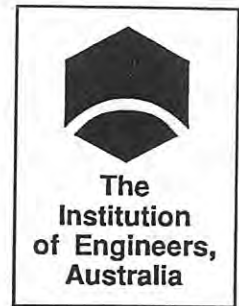
- Existing Railway
- Proposed new deviation
- Dargans Creek deviation
- Original line
- Zig Zag deviation
- Colliery lines
- Roads
- Route of Hike
- Wolgan Valley Railway (abandoned)



Handout pamphlet to attendees at plaquing ceremony.



Engineering Heritage Plaques



Presented by the Engineering Heritage Committee

Commencing at 11am, one of the Institution's Historic Engineering Marker plaques will be unveiled at the Sandford blast furnace site in Blast Furnace Park, Inch Street, Lithgow north east of the railway station.

In the afternoon, a National Engineering Landmark plaque will be unveiled on the Zig Zag Railway. It will be necessary for those wishing to participate to catch the 12.15pm train from the old Clarence station on the north side of Bell's Line of Road, about seven kilometres from Lithgow. A barbecue lunch has been arranged at a cost of \$20 per head (\$10 for children) inclusive of rail fare. In order to assist catering, it is necessary to book for the barbecue lunch by advising numbers to Don Fraser (Home: (02) 337 4867) by October 11th. As an alternative, you are of course welcome to BYO lunch in which case only the rail fare of \$8 (\$4) is payable, no bookings necessary. After the plaquing ceremony at 2.30pm, the return rail journey will reach Clarence at 3.25pm.

Date

Sunday 18 October 1992

Time

11am and 12.15pm

Venue

Lithgow Blast Furnace Site and The Zig Zag Railway, old Clarence Station.

Information

(02) 337 4867

All Welcome!



14 Derby Street
Vaucluse 2030
9 October 1992

Mike Chitty
Sinclair Knight and Partners
Newcastle.

Dear Mike,

During a meeting of the National Committee for Engineering Heritage yesterday in Hobart, at the end of the Engineering Heritage Conference, I gave a report on the Plaquing Programme and summarised arrangements for the joint Lithgow - Zig Zag ceremonies.

Invitations had been sent to Institution officers and others as listed in the Plaquing Booklet, but it was drawn to my attention that members of the Board of Engineering who are in the Sydney region should have been invited. When the booklet is reprinted the BOE will be included.

In the meantime it is my pleasure to extend a cordial invitation to you, albeit late, to attend the ceremonies on Sunday 18th October. Details are given in the attached notice.

Yours sinceley,



D. J. Fraser
Member NCEH and
EH Committee, Sydney.

*Copies also to other
members of the
Board of Engineering
Assoc Prof J. Reizes
Alex Baitch
Prof. Schindhelm*

JOINT PLAQUING CEREMONIES
at
LITHGOW STEELWORKS and ZIG ZAG RAILWAY
on
Sunday 18th October

10.45am	Assemble at Blast Furnace Park off Inch Street, Lithgow or at Workers' Club if bad weather
11.00	Welcome I E Aust speech
11.10	Unveil plaque City of Lithgow acceptance
11.20	Closing remarks and reference to Zig Zag General socialising
11.45	Latest departure for Zig Zag Railway at Clarence.
12.15pm	Train departs Clarence
12.45	BBQ at Cockerton Place or continue to work sheds if bad weather
2.30	2pm train arrives and waits, passengers attend plaquing ceremony I E Aust speech and unveiling plaques
2.50	Train returns to Clarence
3.24	Arrive at Clarence

Combined train and BBQ tickets (\$20 per adult and \$10 per child) must be booked with Don Fraser (02) 337 4867 or to Zig Zag office (047) 57 3061 by 10th October.

After that it's BYO with train tickets only purchased at Clarence.

To attend ceremony only, travel on the 2pm train from Clarence.



The Institution of Engineers, Australia

ESTABLISHED 1919 - INCORPORATED 1926
INCORPORATED BY ROYAL CHARTER 1938

SYDNEY DIVISION

ENGINEERING HERITAGE COMMITTEE

EAGLE HOUSE,

118 ALFRED STREET,

MILSONS POINT 2061

TELEPHONE: 929 8544

ALL CORRESPONDENCE
SHOULD BE ADDRESSED
TO:

THE SECRETARY,
BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

The Town Clerk,
City of Greater Lithgow
180 Mort Street
LITHGOW NSW 2790

Dear Sir,

UNVEILING OF HERITAGE PLAQUES

Two engineering heritage plaques of the Institution of Engineers, Australia, will be unveiled in the Lithgow area on Sunday, 18 October 1992, and I have pleasure in inviting you, on behalf of the Institution's National Committee on Engineering Heritage, to attend these functions.

Commencing at 11.00am, one of the Institution's Historic Engineering Marker plaques will be unveiled at the Sandford blast furnace site in Blast Furnace Park, Inch Street, north of the railway line at the eastern of Lithgow.

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We hope that you will be able to join us on this occasion.

Yours sincerely

Hon. Sec. EHC



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TELEPHONE: 929 8544

ALL CORRESPONDENCE
SHOULD BE ADDRESSED
TO:

THE SECRETARY
BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

Mr I. Stewart
Manager, Engineering Services
City of Greater Lithgow
180 Mort Street
LITHGOW NSW 2790

Dear Mr Stewart,

UNVEILING OF HERITAGE PLAQUES

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THE SECRETARY,
BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

Dr A. Cremin
Dept. of History A17
University of Sydney

Dear Aedeon, *and Jan,*

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Yours sincerely

Hon. Sec. EHC



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THE SECRETARY,
BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

Mr D. Reynolds
21 Toorak Avenue
WOLLONGONG NSW 2500

Dear Don,

UNVEILING OF HERITAGE PLAQUES

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MILSONS POINT, 2061

1 September 1992

Mr J. Fullagar
Chairman,
Sydney Division
The Institute of Engineers Australia
PO Box 138
MILSONS POINT NSW 2061

Dear John,

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BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

Mr J. Dobell
Director
Sydney Division
The Institute of Engineers Australia
PO Box 138
MILSONS POINT NSW 2061

Dear Jeff,

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TO:

THE SECRETARY,
BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

Mr P. Dalland
Chairman,
Civil Engg. Panel IEAust
Dalland & Lucas
PO Box 601
SEVEN HILLS NSW 2147

Dear Peter,

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THE SECRETARY,
BOX 138, POST OFFICE,
MILSONS POINT, 2061

1 September 1992

Mr P. Edwards (*Transbook Panel*)
PO Box 12
NORTH SYDNEY NSW 2059

Dear Peter,

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Yours sincerely

Hon. Sec, EHC

will be inter-railway, and their specialist they will have than most people. During their visit, he will also have a trip to Newcastle Intermodal Train, a 1000-ton steel container, and a 100-ton steel container. He will also be at the Centre, Clyde.

off its high-tech operation to visiting overseas experts attending the 10th International Wheelset Congress (IWC), (see story at left).

Keiron Barlow, manager of the Clyde Freight Bogie Centre workshop, is pleased he has been given the opportunity by

considered the best plant of its type in Australia," Keiron told Xpress. "Reconditioned bogies and wheelsets are assembled along a flow line that weaves through a two-storey building."

"The plant's modern equipment enables it to assemble any standard-

seas visitors would be particularly interested in the Sydney-built demounting and remounting wheel presses.

"The presses have automatic tooling adjustments for different wheels and axles, with a 'nil' downtime when changing from work on



Consider a session with your boss or a job counsellor to help you evaluate your present work situation. Last month we talked about co-ordinating your daily routine to make life just a little easier. But some of you may be a little low on energy particularly if you have the dreaded 'flu' this winter and haven't quite picked up, a little depressed perhaps, or just simply in a slump.

How To Pull Yourself Out Of A Slump

When you're in a rut about your work, your family, or your life in general, the situation can be debilitating. First, take responsibility for your situation and second, take responsibility for getting yourself out of it. Below are some steps that may help you through the process.

Zap Some Energy Into Your Life

Consider what you can do to zap some new energy into your life. Do you feel like you have some needs that aren't being met, some holes that aren't being filled? Try building friendships into your busy schedule.

How about breakfast once or twice a month with a good friend who you never seem to have time to see? Avoid the "I'm too busy" excuse. Make time.

Identify and start doing other things which bring joy into your life. Visit a museum occasionally, lounge on the beach, go to the park with a good book, or take a ballroom dancing class with a friend.

You can also make some easy adjustments in your diet to see if what you're eating may be making you sluggish, or start exercising with a bit more regularity. Little changes can help you to get away from too many stale routines.

Take A Look At The Long Run

If you still feel stuck and suspect it might be something big, like your job or your family situation, do some soul searching. Take time to spend with yourself on this.

Try relaxing for 15 or 20 minutes each day and sorting out your thoughts about work and family. Keeping a journal can also be very helpful in organizing and evaluating your feelings.

Think about what's working or not working in both spheres, and what makes you happy or not so happy. Consider a session with your boss to help you evaluate your present work situation. Maybe you could make some changes at work if you feel your job doesn't fit you well anymore.

Talk to your family as well and don't be afraid to seek the help of a professional counsellor if you feel it may help. Get an accurate picture of what your family expects from you and examine what you expect from them.

Reconfirm with your mate your focus as a couple and determine what's important to both of you. Work together to set some family goals, so that the decisions you make are for the benefit of everyone.

You Do Have Control

Sometimes the worst thing about being stuck is the fear that things will only get worse. Keep a positive attitude and continue to move forward; these two steps will help pull you through.

Then bite the bullet and ask yourself some hard questions. As you begin to set goals, you will feel more and more confident that you do indeed steer the course of your life.



Consider a session with your boss or a job counsellor to help you evaluate your present work situation.

NATIONAL HONOUR FOR ZIG ZAG

The Institution of Engineers Australia is to officially recognise that marvel of engineering - the Zig Zag Railway at Lithgow.

On Sunday, October 18, the Institution will unveil two plaques declaring it to be a National Engineering Landmark.

The Institution has declared many State engineering projects to be of sig-

nificance, but to be declared "nationally" is a rare honour.

Combined train and BBQ tickets at \$20 per adult and \$10 a child must be booked by October 10 with Don Fraser (02/337 4867) or at Zig Zag.

"After that, it's BYO with train tickets only at \$8 for adults and \$4 for children," Don said.



CHINESE DELEGATION INTEREST

State Rail was host to seven internal auditors from China's National Coal Corporation who recently visited NSW to study and exchange ideas.

The group was interested in making a total integrated examination of the State coal systems, including State Rail's operations.

The visit was sponsored by the Institute of Internal Auditors of Australia.

State Rail Manager, Internal Audit, Ross Connor, said the visitors had sought specialised advice on creating an EDP (Electronic Data Processor) audit function for China's Coal Corporation.

"With the co-operation and assistance of Countrylink and Freight Rail, the group visited our Port Waratah Administrative offices, Port Waratah Coal Services Pty Ltd facilities and the Mount Thorley coal loader," he said.

"They were very im-

pressed with the efficiency of State Rail's operations," he added.

The involvement of Internal Audit in the visit of the Chinese delegation illustrates the unit's changing role within State Rail, Ross said.

"It shows how Internal Audit can assist management from a business point of view.

"Our role has changed dramatically in recent years from a traditional function of reviewing every transaction, to one of risk evaluation and systems assessment.

"Internal Audit now looks at the total operations of a particular system or process, and can go beyond strict financial matters," he said.

He advised that the responsibilities of Internal Au-

dit had been clearly spelt out in the Public Finance and Audit Act, as well as in Section 700 of the Accounting Instructions and Guidelines.

"Copies of these documents are contained in the papers which are handed out to participants of the Internal Audit/Corporate Finance briefing sessions on expenditure control," Ross said.

"For copies, please contact the appropriate group's accountant," he added.

ABOVE: The Chinese Internal Audit delegation pictured at Mt Thorley with (second from left) Richard Eden, EDP Auditor, next to him, Laurie Tomlin, Deputy Manager, Northern Bulk Terminal, and, left front, Ross Connor, Manager, Internal Audit.

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ons," Barry admitted.

"Over the past two years I have scoured the State, and I still can't locate some of them."

Barry has clocked up more than 50,000 kilometres in his search.

Even finding the wagons doesn't mean the end of the story.

"I've had many a run-in with country proprietors over wagon ownership," he said.

One Freight Rail manager was heard to say that country contractors "shuddered when they heard 'Blowtorch' Barry was on his way to see them".

Change

When Barry was chosen for the disposal job it was quite a surprise to him.

"I've spent 30 years building freight wagons," he said.

"Then I was given the project of getting rid of 2000 of them!"

As well as locating the condemned wagons, and getting approval to scrap them, Barry had also to ar-

to contractors' sidings and cut up for scrap.

His success has been recognised by management, in a nomination for the Group General Manager's Award for Excellence.

In his citation, Chief Engineering Manager, Track and Rolling Stock Section, Terry Hatton, said Barry had nearly achieved the disposal target under very arduous conditions.

"He had to overcome many obstacles and hindrances," he said.

"I do not believe there would be many staff in State Rail who possess the knowledge, perseverance and dedication to carry out this project as effectively," he added.

Do you have a story for XPRESS? Discuss it by phoning 32813 or 2242813.

State Rail has lifted the ban on mining under its tracks after two years of monitoring a coal operation under the Main North Line near Lake Macquarie.

Fears of damage to tracks by subsidence were not realised after successful longwall tests at Teralba Colliery by FAI Mining.

The contentious operation was begun by BHP - then owner of Teralba Colliery.

Monitoring and Liaison Committee chairman Milton Morris said: "The mining secured 2.7 million tonnes of coal, generating export revenue of \$116 million, providing \$34 million in Government receipts from royalties, rail freight, payroll and group tax, and injecting an estimated \$72 million into the immediate community through expenditure.

Monitoring

"In addition, the monitoring program was of great technical benefit to the State Rail Authority and also allayed fears about any future coal extraction programs under railway lines.

"Also, the data gathered over the two years will benefit future planners - although they will still have to evaluate individual projects on their merits."

Approval to mine was granted subject to stringent conditions that included extensive monitoring and close liaison with the community and State Rail.

The mining caused land subsidence of about 40cm but no damage was detected to the railway tracks.

The Mines Subsidence Board built a demonstration house at West Wallsend, near Teralba Colliery, to show the effect of underground mining.

Cracks

Minor cracks appeared in some cornices and cost \$4,000 to fill and paint over.

FAI Mining paid \$25,000 for the printing last year of a new train timetable for the Main North Line, after State Rail imposed speed restrictions on a 400-metre section of track in the Booragul area - adding four minutes to the Sydney-Newcastle journey.

The controversial mining project has attracted the attention of the rest of the local coal industry.

Every tradesperson received initial training in quality principles and practices at the onset of the program.

All staff were invited to be part the quality teams set up at the maintenance centre.

"The attendance at weekly meetings was enthusiastic, if at times input became quite heated," Bede revealed.

"Staff suggestions were

brought up to date.

"None of this would have been possible without the passionate support of head office, through the management steering committee, which meets monthly," he said.

Quality

Local Quality Assurance representative Terry Cawthorne admits he was initially "dubious" about QA.

"Centre Manager Warren

Quality Mar
niques at th
NSW," he s

Training

"Ten staf
training."

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Parkinson p
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HELP FROM BALLAS



A low 2 degree temperature at West Wyalong didn't deter members of 107 Extra Gang putting the new ballast routing machine through its paces. The gang is attached to the Program Engineer, Metropolitan Region. The new machine has been bought by Railway Plant Hire to improve re-railing productivity. Pictured are, from left, Chief Inspector, I. Woodward, Ganger, G. Freeman, Inspector, J. Barby and Operators S. Drury and C. Chapman.

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FRAUD AND CORRUPTION AFFECT US ALL

If you know instances of:

- bribes being offered and/or accepted;
- improper disposal of property or equipment;
- misuse of material or information gained in the course of employment;
- dishonest or improper use of work positions or any other corrupt or fraudulent activity ...

WE NEED YOUR HELP TO STOP IT!

- tell your immediate manager/supervisor. or
- contact the Manager, Internal Investigation on (008) 04 7731, or
- write to the Chief Executive, 5th floor, Transport House, or
- contact the Independent Commission Against Corruption (ICAC) on (02) 318 5999.



State Rail

R. HALCROW, Secretary

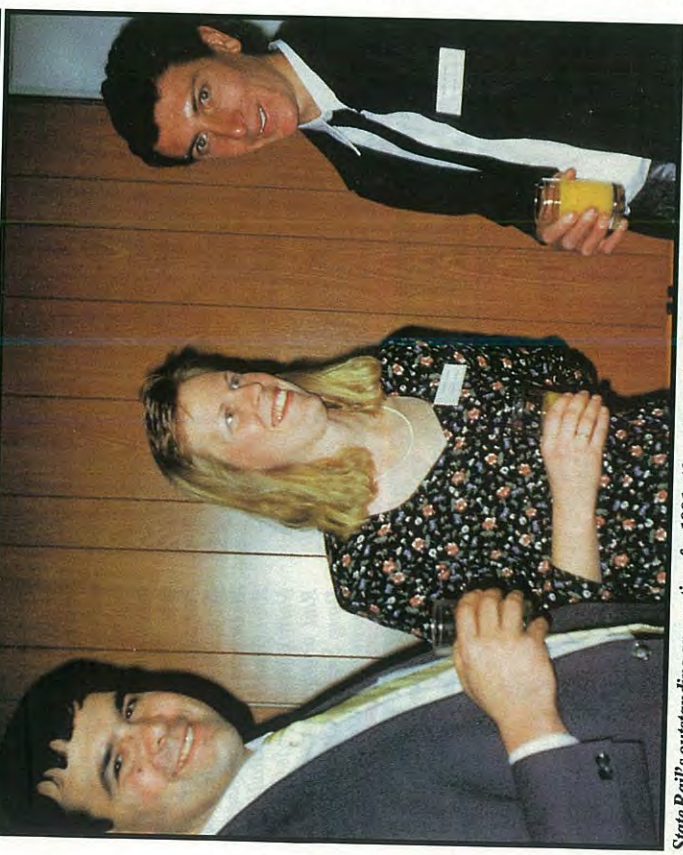
Freight Rail & Countrylink XPRESS

ISSUE No. 31

The newspaper for Freight Rail and Countrylink staff

September 1992

TOP APPRENTICES BREAK OLD MOULD



State Rail's outstanding apprentices for 1991 - (from left) John Peric, Jenny Hanssen and Mario Attard.
CENTRE'S OUTSTANDING PUPILS
A 33 year old BA with a host of previous occupations was named State Rail's Outstanding First Year Apprentice for 1991 at the presentation of awards at

SUPER TERMINAL

A \$30 million "Super Terminal" will soon be under construction at Freight Rail's old Enfield Marshalling yards.

The historic 75 year old yards closed at the end of June to make way for a new, modern and highly-efficient freight terminal which will serve the whole of Sydney from late 1993.

Enfield is being completely rebuilt to handle all rail freight received and despatched in the Sydney area.

On its completion in 18 months, the smaller freight terminals at Cooks River and Chullora will close.

Rebuild

Regional General Manager Metropolitan, Bob O'Loughlin, said it had been decided to close Enfield to enable the project to be completed in the shortest time.

"It would have been possible to rebuild Enfield while



Enfield Project Manager Alan Vickery (right) with Colin Glaysheer (Civil Construction Engineer).

closure of Enfield marked the end of long and meritorious careers.

They included: John McLoon, Yard Controller, 43 years' service; Les Cook, Yard Controller, 42 years' service; Ray Malov, Yard Controller.

They were helped by stalwarts Max Henderson and Chris Whittion.

Bob O'Loughlin also paid tribute to the Enfield staff who have now transferred to Rozelle Circle and a

TRAIN WAGONS ROLLING

Wagon availability, a vital element in Freight Rail's pursuit of cost-efficient operations, formerly below 70 per cent, is planned to reach 91 per cent in the near future.

The dramatic improvement is mainly due to the Wagon Maintenance Information System (WMIS) - the brainchild of Freight Rail's Engineering Division IS Unit.

Peter Milton, Manager of the unit, said a special project team to study the problem was set up in October 1991.

It involved staff from the Information Systems Unit, Corporate Systems Development Section and Metropolitan and Northern Regions.

Basic to the operation are wagon status reports issued as "tickets" by examiners.

The People Page

KERRY'S
COUNTRYLINK
CORNER

TECH CENTRE WALK FOR MS



Kerry McNamara,
Countrylink
Travel Centre Manager.
Each month when plan-
ning this column, I try to
get you the best avail-
able deals in the mar-
ketplace.

During the current reces-
sion there are plenty of
tempting offers but, after
going over some previous
columns, I find that I have
offered many properties in
Queensland.

So this month I tried to be
different - but to no avail!

In fact the only packages
I could come up with were
Sunlover's Dollarwise
Deals. Sure, there are other
places, such as Tassie, but
because of school holidays
all the cheap deals end on
September 18.

Not so with the
Dollarwise Deals. They are
valid until December 18 and
represent exceptional value
for money.

The fares listed below in-
clude five nights' accom-
modation based on twin
share, with or without return
air fares, and are per person.

If flying is out of the ques-
tion for you, why not use
your rail pass to get there?

* Cairns Village Resort,
\$484 with air, \$115 without



This stalwart team from the Technical Training Centre, Chullora, pictured at Darling Harbour, is set for a harbour-side walk-- all in a good cause. The group was walking to raise funds for multiple sclerosis research. According to organiser, Occupational Health Nurse at the centre, Janne Robertson, their efforts were well worthwhile, with several hundred dollars raised in sponsorship from staff, family and friends.

LANGUAGE PROGRAM HELPS

COURSES HELP

WITH JOB SKILLS

The frustrations of be-
ing unable to use over-
seas qualifications have
long been a problem for
newcomers to Aus-



HELP FOR CANCER KIDS

A series of daily auctions
of railway memorabilia
and tour packages ear-
lier this year at Newcastle
Show raised \$3,125 for
the city's Ronald
McDonald House.

Freight Rail, Countrylink
and CityRail staff joined forces
in organizing the auctions to
aid the worthy charity.

Newcastle auctioneer Justin
O'Brien donated his services.
Countrylink donated fam-
ily trips and Australia's Won-
derland packages were also
auctioned.

Families stay at Ronald
McDonald House while their
seriously-ill children are
treated at a nearby hospital.

At the cheque presentation
from State Rail to McDonalds
were (from left) Deborah
Layton (CityRail admin. as-
sistant), Colin Cowell (Man-
ager CityRail North), Gary
Peterson (CityRail stores of-
ficer), Anne Peters (Ronald
McDonald House manager),
Bruce Hall (Freight Rail RCM
North), Maria Lewis (Freight
Rail admin. assistant), and
Doug Smiley (CityRail Fleet
Maintenance Manager).



COUNTRY FIRST-AIDERS



Lithgow Convention

The Sydney Western and Central West Groups are currently organising a Weekend Convention at Lithgow on 7-8 Nov, 1992.

A family weekend is planned, with an interesting program including a visit to a Coal Mine (you can go underground if you are 18 years and over), a large Power Station, a Steam Train ride down the Zig Zag Railway, and a BBQ lunch.

For enquiries phone Sarah Lambert on (02) 929 8544.

Recognising History

Two important Engineering Heritage Landmark Plaques will be unveiled on Sunday 18th Oct.

A plaque will be unveiled on the Sandford Blast Furnace site (Blast Furnace Park, Inch St, East Lithgow) at 11am, and another later the same day at the Zig Zag Railway. Those wishing to attend the later ceremony should catch the 12.15pm train from the Old Clarence (Zig Zag) station on the north side of Bell's Line of Road, 5km east of Lithgow. There will be a charge of \$20 per head (\$10 for children) which includes train fare and full BBQ lunch. Bookings are necessary with Don Fraser (02) 337 4867.



Pyrmont Bridge Plaque

Environment Seminar

•The Impact of the New EPA and WREPS on the Management of Wastes in Sydney.

- 30 Sept, \$30
- 2-6pm Seminar
- 6-8.30pm for dinner
- IEAust Auditorium

The recent establishment of the EPA and the Waste Recycling and Processing Service of NSW will have far reaching implications for everyone involved in waste management in Sydney.

This Seminar will update you on the changes that have occurred and which are being developed; and will allow discussion of the problems, opportunities and challenges associated with the new institutional arrangements. Phone Karen Yu on (02) 929 8544 for details.

Public Speaking

Sydney Division's Public Speaking Group has joined with Toastmasters International. The Group now offers engineers an excellent opportunity to master public speaking and conducting meetings. Toastmasters also provides an excellent library of training literature and international and national public speaking competitions.

The group holds meetings every second Monday at 6.40pm at the Graphic Arts Club, 22 Regent St, Chippendale (near Central). See "What's On" for meeting dates. Contact Sam Mackey on (02) 226 1684 for further information.

Council & Division Committee nominations

Sydney Division invites nominations from Corporate Members for election respectively as Councillors, Honorary Treasurer, and members of the Division Committee.

Election as Councillors for Sydney Division will be for the years 1993 and 1994, and for the Division Committee, for the 1993 year.

Nominations will close at Sydney Division Office, 118 Alfred St, Milsons Point NSW 2061 at 5.00pm on Friday 9 October 1992, and all such nominations must be made on the prescribed form which may be obtained on application to the Division Office.

All nominations must be accompanied by the written consent of the nominee to her/his nomination and must be signed by the proposer and seconder of that nomination.

Candidates are required to submit for publication a recent black and white photograph of no less than 150mm x 100mm, together with a statement not exceeding 120 words, setting out briefly their qualifications, place of employment, engineering experience and participation in Institution activities.

NB. The Division Committee has resolved that where the statement exceeds 120 words, the contents of the statement will be published to the extent of the 120th word, and all subsequent words will be omitted.

Jeff Dobell, Director

Western Australia:

(A.R.H.S.)

September

27th - York Jazz Festival
(Details:- (09) 377 1588)

(Hotham Valley)

September

6th - Dwellingup Forest Ranger
9th - Wannamal Lakes Wildflower Explorer
12th - Northam Show Steam Explorer
13th - Dwellingup Forest Ranger
15th - Wannamal Lakes Wildflower Explorer
19th to 21st - Pemberton Karri Forest Steam Safari
20th - Quairading Explorer
23rd - Wannamal Lakes Wildflower Explorer
25th - Wannamal Lakes Wildflower Explorer
26th to 27th - Albert Facey Country Steam Safari

October

4th - Three Springs Explorer
10th - Toodyay Show Steam Explorer
11th - York European Car Day and Octoberfest Steam Explorer
17th - Harvey Show Steam Explorer
18th - Dwellingup Forest Ranger
20th to 22nd - Hyden - Wave Rock Wildflower Safari
24th - Dwellingup Forest Ranger
25th - The Great Western Race Steam Special
27th - Gingin Seniors Week Steam Explorer
31st - Farewell to 1992 - Brunswick Steam Explorer

November

15th - Toodyay Avon Valley Country Music Festival Explorer
21st - Collie Show Explorer
28th - Bridgetown Show Explorer

December

13th - Santa Special City Circle
31st - New Year's Eve Party Express

Etmilyn Forest Diner

Operates every Saturday, plus some Fridays. The Hotham Valley Railway takes you into the heart of the floodlit Jarrah Forest and lets you dine in style aboard its 1916 vintage Dining Car.

Further details may be obtained by writing to:- HVTR Travel Centre, 86A Barrack Street, PERTH, W.A., 6000. Telephone (09) 221-4444

LAST TRAIN TO COBAR

As part of the Cobar Rail Centenary organised by the Back to Cobar Festival Committee, the "Last Train to Cobar" will leave Sydney on Friday 2nd October and arrive Cobar the following day.

Further details and bookings from Jean Poulter, Cobar Travel, (068) 36 2128.

COUNCIL NEWS

Publications

Copies of "The Overland Railway" were received from the printers on 10th August. Initial sales have been encouraging. The book was due to be officially launched at the Adelaide Casino on 28th August.

A copy of the text for an updated edition of Australian Tourist Railways and Museums has been received from the Editor, Bob McKillop. Additional photographs are to be sought to illustrate the text and production should commence immediately. It is expected that this booklet will be marketed as part of a series of publications under a generic name.

Christmas Function

It was agreed to change our established format for the December Entertainment Meeting and to replace it with a dinner later in the month. Further details will be announced when arrangements are completed.

Archives

Two large collections of photographs have been recently added to the Archives. When cataloguing is completed, these will be accessible to researchers.

MEMBERSHIP

The death of Arthur Corkill of Gladesville was recorded by Council at its August meeting.

SOCIETY MAGAZINES

The mailed distribution of our magazines at the date of the August Council Meeting stood at 1230 ARHS Bulletins (NSW Div. Members) and 2233 Railway Digest.

A further 315 copies of ARHS Bulletin are mailed to persons who are not members of the NSW Division.

Wholesale distribution by this Division of Bulletin stood at 87 copies and of Digest stood at 660. A further 910 copies of Bulletin are forwarded to other Divisions of the ARHS for distribution to their members.

Gordon & Gotch are providing net sales of approximately a further 1500 copies of Digest.

ZIG ZAG RAILWAY

The Institution of Engineers will declare the Zig Zag Railway at Lithgow a National Engineering Landmark on Sunday, 18 October. Two commemorative plaques will be unveiled. Combined train and BBQ tickets are available and must be booked with Don Fraser on (02) 337 4867. Further details are available from The Institution of Engineers or Zig Zag Railway.

EURAILPASS UPDATE

A recent issue of Passenger Train Journal advises that "although Rail Europe doesn't admit this, officials from the tourist offices of both Poland and Czechoslovakia have assured me that regular Eurailpasses are now accepted for travel in these countries..."

OVERSEAS NEWS

Member, Dr John Kramer, recently visited Indonesia and has written a report from which the following extract is made.

"On 10th July, I visited the Transport Museum located within *Taman Mini Indonesia*. Six steam locomotives are preserved in good condition just inside the entrance. The tracks on which these locomotives sit are connected via a short length of steep track featuring a rack to an oval of track which travels all the way around the Transport Museum buildings. At the far end is a recreation of Ambarolwa station, turntable with locomotive and carriage, and no less than 19 steam locomotives restored and displayed individually in a level, attractive, setting. Two small diesel locos haul several venerable wooden passenger cars around the oval of track at weekends."

Extracts from Railway Gazette International

South Korea

A ceremony was held on 30 June to mark the start of civil engineering work on the 409 km Seoul - Pusan high speed line.

The government has announced that Korean National Railroad will be converted from a government agency to a public corporation in 1993.

France

French TGV technology has been chosen for the 27 high speed trains planned to run between Paris, Brussels, Köln and Amsterdam. Each 300 km/h trainset will have eight articulated trailers accommodating 120 first class and 257 second class passengers. The two power cars will be able to take power at 25 kV 50 Hz, 15 kV 16 2/3 Hz, 3 kV DC and 1.5 kV DC. The trains are due for delivery by 1996.

Denmark

The bridge and tunnel linking Kørsor and Nyborg by rail is now expected to open at the end of 1995.

Iran

Construction of the long-planned 180 km rail link from Mashhad to the Turkmenian border town of Sarakhs began in June. Civil engineering work on the line is being undertaken by the Iran Islamic Revolutionary Guards Corp.

Brazil

The Parana State government has signed an agreement for the Brazilian Army to undertake civil engineering work on the 248 km Guarapuava - Cascavel section of the Ferroeste rail link. The state retains responsibility for trackwork and operation of the line.

Italy

The final 16 km of the Roma - Firenze direttissima opened to regular services on 31 May.

FS has decided to adopt the standard international voltage of 25 kV 50 Hz for its planned AV network of high speed lines. These comprise the 222 km line from Roma to Napoli; a 275 km Firenze - Milano link and a 420 east-west route from Torino to Venezia, all to be constructed over the next 5 to 6 years.

U.S.A.

The first scheduled passenger service to traverse the entire width of the United States, Amtrak's *Sunset Limited* will start running tri-weekly between Miami and Los Angeles from 4 April 1993. The train will take 58 hours to cross eight states and will be the first double-deck Superliner service east of New Orleans.

Work on a new commuter route from Boston's South Station began on 12 June. The *Old Colony* lines last saw passenger trains in 1959, but as from 1996 up to 15 000 passengers are expected to use the reopened lines.

Southern Pacific has suggested the introduction of commuter services from Oakland to Fairfield and Brentwood over 113 km of its tracks as a way of relieving road congestion. If the offer was accepted, services could be running within a year, using spare coaches from the San Francisco - San José line.

Sante Fe has agreed to sell 545 route-km in California to eight transport agencies planning to run commuter services.

Arizona state is to study the feasibility of creating a 690 km passenger network using Southern Pacific and Sante Fe tracks to link Phoenix with Yuma, Nogales and Wickenburg.

New York's MTA has announced proposals for a fares freeze, discount fares and season tickets as part of a package to increase passenger numbers.

Thailand

The Thai government has cancelled the master agreement for construction of a 36 km elevated network based on Vancouver's automated Skytrain light metro.

Hong Kong

The Kowloon-Canton Railway's existing main line handles 14 freight trains each day between Kowloon and the Chinese border, but growing passenger business means the line capacity may be exhausted in five years. The KCR is planning a second line through the New Territories to serve the growing residential estates around Yuen Long. The new line will run from Kwai Chung which will be linked to Victoria on Hong Kong Island by the planned line to Chek Lap Kok airport.

Austria

ÖBB has taken delivery of three prototype low-floor wagons capable of carrying standard 44 tonne lorries. The 10-axle wagons have 370 mm diameter wheels and the floor height is just 430 mm.

India

An 18 km link across the Thane Creek bridge to New Bombay was opened on 20 June. Central Railway will initially run 72 trains a day from Bombay's Victoria Terminus to Vashi, increasing as demand builds up. The line will be extended to Panvel and Uran in 1994.

Germany

Work is to begin shortly on the electrification of the 203 km Hamburg - Kiel - Flensburg line. Electric services are expected to begin in 1994.

DR and PKP have established a further passenger connection between their networks with the restoration of Strausberg - Gorzów local services at the start of the summer timetable.

Spain

The Paris - Madrid Talgo was extended to run over the NAFA line to Sevilla at weekends as from 26 June.

Czechoslovakia

The border crossing to Germany from Vejprty to Bärenstein, which was to reopen to passengers on 4 July, will retain a 900 mm gap at the border. ČSD says it lacks the funds to operate the service.

Extracts from World Steam

India

To obtain a photographic permit, the Indian High Commission in London (and presumably Canberra) can supply an application form which, when completed, should be sent to the Railway Board in New Delhi. Permits to visit Darjeeling are no longer necessary.

There were recent reports of cases in Goa where police had planted drugs on western tourists. Those unlucky enough not to have large sums of cash to pay off the police are languishing in prison with Consular staff either unwilling or unable to help. Railway enthusiasts beware!!

There have been no recent changes on the narrow gauge Murtaipur system. The all-steam operations using F and ZD classes continue, with both classes still being put through the main works. The locomotive foreman is confident that steam will remain until 1995 at least. The Yavatmal line is highly recommended for photography.

South Africa

The Aliwal North - Barkly East branch was privatised as from 3

April. The new owner, NECRAIL, intends using steam locomotives leased from the Spoornet museum.

China

Independent travel through China may not be all that difficult. There are numerous CITS offices. Many visitors have their 'pet' local agents that offer excellent service. One regular visitor uses Jilin OTC in Changchun for example (fax 0011 86 431 642419) who do all that is required for serious lineside photographers. Problems seem to occur with offices used to dealing with Japanese groups. Quite staggering sums of money are requested of these groups and the Japanese pay. When the European visitors refuse to play this game, then the trouble starts.

SOLID STATE SIGNALLING UNDER COURT SEIZURE

Four people died at Newton in Scotland just over a year ago after a train passed a signal which, if the interlocking had functioned correctly, must have been red. However, a claim was made that the signal was clear. Subsequent tests found no fault with the signalling, but this happened to be the first fatal collision to occur anywhere in the world which involved solid-state interlocking.

Faced with the black magic of computer logic, the Procurator Fiscal apparently ordered Strathclyde Police to impound the signalling equipment! Although the interlocking remained in-situ, access by British Rail technicians for fault-finding or maintenance required the presence of a police officer who promptly seized as evidence each printed circuit board as it was removed from the racks.

In light of this impossible situation, BR decided to shut down the SSI, suspend some local services and institute a "crude form" of manual telephone block on the busy West Coast main line through the winter of 1991-92.

Railway Gazette International wonders whether the Procurator Fiscal would have been as ready to impound the radar at Glasgow Airport for six months, leaving controllers to talk down planes using nothing but voice radio.

THE LAW OF THE JUNGLE?

Railway Gazette International makes the following comment in its August 1992 issue:

The state run bastion of Britain's nationalised railway was assaulted by the private sector crusaders on 14 July when Secretary of State John MacGregor published a White Paper setting out his government's vision of how BR will be slowly dismantled and ultimately destroyed. In its place will rise a plethora of private paragon, each of which will channel its management skills, flair and entrepreneurial spirit into providing better rail services for the British Public. We (RGI) are touched by Mr MacGregor's faith.

We are not so impressed by his conception of two quangos. One will be a Regulator to police the activities of the infrastructure company, Railtrack, to ensure that timetable paths are provided at a fair price, and that operators do not collude in anti-competitive fashion. The other will be a Franchising Authority, which will decide how the national passenger service is to be carved up.

The Railway Expectorate, part of the Health & Safety Executive, will simultaneously mushroom into a third colossus of bureaucracy, for all operators will need to have both staff and equipment certified. Having done that, signed contracts with the Franchising Authority, and obtained a licence from the Regulator, the passenger operator must also sign a contract with Railtrack, to whom it must pay track charges. It is here above all that a fair formula must be found, so the government has passed the buck to accountants Coopers & Lybrand. Meanwhile, there should be ample jobs for droves of lawyers and consultants, who will share the rich pickings with an army of paint suppliers and logo designers - there could be more than 100 train operators by 1999.

There is little doubt that private sector involvement can trigger benefits, particularly in the freight business, but the chaotic jungle of the White Paper raises many questions and provides few answers. The greatest deficiency is the failure to address the investment needs of Britain's railways. When asked about rail investment in other European countries, MacGregor's response was revealing: "I don't think they are an example that we wish to follow." So we are left wondering how the dozens of competing operators, scattered all over the network, will agree to fund new rolling stock, let alone pay Railtrack to invest in upgrading, electrification, and resignalling. New line construction becomes a distant vision. Bear in mind that about £500m will be needed to fund ATP, which BR Chairman Sir Bob Reid described as a "sine qua non" for rail operations.

At least the White Paper set out one clear objective. We read that "railway management should be free to get on with its main task of running services to the satisfaction of passengers and customers". Quite so.

Members' Newsletter

(Compiled by Geoff Lillizo)

MEETINGS

Sydney: Combined meetings of the Society and the New South Wales Rail Transport Museum are held on the first Wednesday of each month in the Auditorium, St. Andrew's House, Sydney Square, Sydney, at the rear of St. Andrew's Cathedral. The doors open at 7.00 pm and the meeting usually commences at 7.30 pm with a business meeting. This is followed by the screening of the monthly slide competition and, in turn, this is followed by the guest speaker, films, etc., scheduled for the month.

The following is the agenda for these months:-

October - Ian Brady will present an address on "The Evolution of Locomotive and Carriage Design in Australia since 1870".

November - To be advised

December - Vince Graham, Managing Director, National Rail Corporation

Monthly Slide Competition: Entries for this popular and free competition should be handed to one of the three judges, Ian Williams, Rod Broune or Peter Sage, prior to 7.15 pm on the particular topic evening. The competition is open to members of the A.R.H.S. and the N.S.W.R.T.M.. A maximum of **FOUR** slides per member may be submitted each month and each slide **MUST** have the member's name thereon to be eligible. The winner each month receives a \$10.00 gift voucher on our Redfern Sales Centre.

Topics for the coming months are:-

October - The driver

November - The Mixed

December - Preserved in retirement

January - Red for danger

February - The driver's view

March - Ready for departure

April - Cuttings

May - Rail comfort

June - Rail discomfort

Winning slides are selected on the photographer's result in a particular situation, as well as the ability to capture the intended spirit of the stated topic, any special effect, anticipation or impact that the slide may give to a viewing audience.

The subject at the August meeting was *Homeward Bound* and the winner was John Riley.

BRANCH MEETINGS

Newcastle: This Branch's meetings are held on the second Tuesday of each month, commencing at 8.00 pm, in the New Lambton Community Centre, Cnr. Alma Road and Cromwell Street, New Lambton.

ARCHIVES OF RAILWAY HISTORY

The A.R.H.S. is responsible for the cataloging, maintenance and access to the archives of railway history collected by the A.R.H.S. N.S.W. Div. and the N.S.W.R.T.M. These archives are now located in premises owned by this Society at 83 Edwin Street, Croydon (north of the station, adjacent to the pizza shop). Access is available on the first and third Saturdays of each month from 10.00 am to 3.30 pm. (closed between 12.30 and 1.00). The custodians can be contacted by phone on (02) 799 8795. Research enquiries should be forwarded to P.O. Box 345, Toongabie NSW 2146.

A.R.H.S. SALES CENTRE

The A.R.H.S. Sales Centre is situated on First Floor, 182 Redfern Street, Redfern. It is open from 12 noon to 5.30 pm on Mondays to Fridays and from 9.00 am to 4.00 pm on Saturdays (Public Holidays excepted). See supplements for further details.

Enquiries by telephone or fax to (02) 699 1714.

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Australian Railway Historical Society New South Wales Division (A.C.N. 000 538 803)

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HERITAGE TRAINS AND TOURIST RAILWAYS

The announcements provided in this section are compiled from information supplied by the organisers. Apart from tours and activities organised by the ARHS NSW Division, this Society can not supply further details. Members must contact the particular organiser direct.

Australian Railway Historical Society New South Wales Division can accept no responsibility for the accuracy or otherwise of the details printed herein.

N.S.W.:

(A.R.H.S.)

September

12 & 13th - Newcastle Coalfields "Pits and Pubs" tour. See last month's Members' Newsletter for details.

November

28th - Steam & Sail to Wollongong - Ferry Collaroy and steam train

(Phone (02) 477 5041 for details of ARHS NSW Div. tours)

(N.S.W.R.T.M.)

September

26th - Hunter Wine Express - 3642

October

3rd - Bowral Tulip Festival - 3642

16th to 19th - Griffith, Hillston, Temora, Lake Cargelligo and Rankins Springs

25th - Kiama Seaside Festival - 5910

November

13th to 16th - Melbourne and *Phantom of the Opera*

(Details: Phone (02) 744 9999)

(S.E.T.S.)

September

19th - Outer Western Red Revisited! Mortuary Station, Carlingford, Penrith, Emu Plains, Enfield, Bondi Junction - W-set

(Details: (02) 623 2860)

(3801 Limited)

September

26th - Bowral Tulip Festival

27th - Bowral Tulip Festival

28th - Bowral Tulip Festival

October

3rd - 3112 AMRA Liverpool shuttles

4th - 3112 AMRA Liverpool shuttles

15th to 19th - Griffith Garden Festival

31st - Maitland - Rothbury Jazz Concert

November

7th - Blue Mountains - Blackheath Festival

22nd - Hamilton Wine Tasting & Food

27th - Twilight Christmas Party to Hawkesbury River, Woy Woy & Gosford

28th - Robertson & Summit Tank

29th - Camp Quality - Robertson & Summit Tank

December

4th - Twilight Christmas Party to Hawkesbury River, Woy Woy & Gosford

6th - Robertson and Wollongong

11th - Twilight Christmas Party to Hawkesbury River, Woy Woy & Gosford

18th - Twilight Christmas Party to Hawkesbury River, Woy Woy & Gosford

January

26th - 50th Birthday Celebrations

March

6th - Robertson & Summit Tank

7th - Hamilton Jazz Festival

(Details:- Phone (02) 699 2737)

(Zig Zag)

The Zig Zag Railway Co-operative Limited will be operating this all-steam museum railway, situated near Lithgow, each Saturday and Sunday throughout the year. Trains will also operate on the following additional days:-

September

Daily from 26th to 30th inc.

October

Daily from 1st to 11th inc.

December

Daily from 26th to 31st inc.

(Further details - (047) 57 3061 or (063) 52 2711)

(S.T. & R.P. (Co-op) Soc. Ltd.)

The Steam Tram and Railway Preservation (Co-op) Society Limited operates a preserved steam tramway in Parramatta Park on the third Sunday of each month. Running commences around mid-day. Motive power is steam tram motor 103A hauling trailers cars 74B and/or 191B. Steam locomotive 1022 is used on the 5th Sunday of month running days.

(Further details: (047) 351245 or (02) 630 6304)

(Richmond Vale)

Situated 4km south of Kurri Kurri, on Mulbring Road, Pelaw Main, the Richmond Vale Railway Museum and Richmond Main Colliery Historic Park are open on the first full weekend of every month, plus the 3rd Sunday. The museum opens at 10.00. Trains operate over part of the former track of the Richmond Vale Railway from 10.30.

Queensland:

(A.R.H.S.)

September

11th - Laidley Dinner Tour - C17 974

12th - Sunshine Coast Hinterland - Mooloolaba/Fairhill - C17 974

19th - Toowoomba Carnival of Flowers - BB18¼ 1079

24th - Toowoomba Carnival of Flowers - BB18¼ 1079

26th - Toowoomba Carnival of Flowers - BB18¼ 1079

30th - Beaudesert - PB15 732

October

1st - Beaudesert - PB15 732

10th - Yandina Spring Fair

17th - Gympie

November

6th - 40 Years of diesels

28th - Wallangarra

29th - Millerran

December

5th - Christmas tour

(Details:- G.P.O. Box 682 BRISBANE Qld. 4001)

(Trainaway Tours)

October

4th to 24th - Northern and Central Queensland

(Details:- P.O. Box 226 ALDERLEY Qld. 4051)

A.C.T.:

(A.R.H.S.)

September

11th to 14th - Victorian Springtime Railway Ramble

18th to 20th - Banquet Express to Melbourne - *Phantom of the Opera*

October

11th - Official opening of Michelago Scenic Railway

November

2nd to 4th - Melbourne Cup Express

7th - Michelago Scenic Railway

8th - Michelago Scenic Railway

27th to 29th - Banquet Express to Melbourne - *Phantom of the Opera*

December

5th - Michelago Scenic Railway

5th - Christmas dinner-dance train to Michelago

6th - Michelago Scenic Railway

12th - Christmas dinner-dance train to Michelago

March

26th to 28th - Banquet Express to Melbourne - *Phantom of the Opera*

April

16th to 18th - Banquet Express to Melbourne - *Phantom of the Opera*

(Details:- Tel. (06) 257-1379)

Victoria:

(A.R.E.)

October

10th - Castlemaine, Maryborough, Ararat & Ballarat - R class

November

14th - Warrnambool - R class

February

12th to 14th - Pinaroo via Ouyen - DERM

(Details: (03) 629 1786)

(Steamrail)

October

2nd to 4th - Robinvale Weekender

November

1st - Lake Goldsmith Steam Rally

29th - Three R-class to Bendigo

December

6th - Gippsland National Park

(Details: (03) 397 1953)

South Australia:

(A.R.H.S.)

September

18th to 20th - South Coast Explorer - 958, 507, 520 or 621

October

6th - Bridgewater

8th - Bridgewater

16th to 18th - South Coast Explorer - 958, 507, 520 or 621

30th to Nov. 1st - South Coast Explorer - 958, 507, 520 or 621

The Southern Encounter, which operates as a day return steam-hauled trip from Adelaide to Victor Harbor, and **The Cockle Train**, which operates between Goolwa and Victor Harbor, will be running on all Sundays in September, October and November.

The Cockle Train will operate between Goolwa and Victor Harbor from September 27th to October 5th inc.

(Details:- (08) 231 1707)

(Pichi Richi)

The Pichi Richi Railway, which is based at Quorn, will be operating on the following days:-

September

Sunday 13th

Saturday 26th

Sunday 27th - One journey will be by Steam motor-coach

Tuesday 29th

Wednesday 30th

October

Thursday 1st

Saturday 3rd

Sunday 4th

Monday 5th

Tuesday 6th - Diesel

Wednesday 7th - Diesel

Thursday 8th - Diesel

Friday 9th - Diesel

Saturday 10th

Sunday 11th - Diesel

Sunday 25th - Diesel

November

Sunday 8th - Diesel

Sunday 22nd - Diesel

Unless otherwise indicated, at least one steam hauled train is scheduled each day.

Prior booking is essential. Credit card charge available by ringing Bass on 008 888 327. All enquiries to (086) 48 6598.

(Steamtown)

September

27th - Orroroo

October

4th - Eurelia

(Details:- Phone (086) 51 2438)

14 Derby Street
Vaucluse 2030
7 August 1992

The Secretary
Australian Railway
Historical Society

Dear Sir,

Zig Zag Railway

Attached is a notice about the Institution's plans to honour this great work by declaring it to be a National Engineering Landmark. The event will have broad appeal for the general public, engineers, railway enthusiasts and tourists.

The Institution would be grateful if you could assist by publicising the event to your members so that such an important occasion can have a good attendance.

Yours sincerely,

D. J. Fraser
Engineering Heritage Committee
(phone 337 4867)

14 Derby Street
Vaucluse 2030
7 August 1992

Mr. Arthur Tubby
General Manager
NSW Rail Transport Museum

Dear Arthur,

Zig Zag Railway

Attached is a set of notices about the Institution's plans to honour this great work by declaring it to be a National Engineering Landmark. The event will have broad appeal for the general public, engineers, railway enthusiasts and tourists.

The Institution would be grateful if you could assist by placing the notices on display and by publicising the event to your members so that such an important occasion can have a good attendance.

Yours sincerely,

D. J. Fraser
Engineering Heritage Committee
(phone 337 4867)

ZIG ZAG , LITHGOW

On Sunday 18th October there will be a special event at this great engineering work. The Institution of Engineers will declare it to be a

NATIONAL ENGINEERING LANDMARK

and two commemorative plaques will be unveiled. The timetable is

12:15pm	Train departs Clarence
12:45	BBQ at Cockerton Place
2:30	2pm train arrives and waits. Passengers attend the plaquing ceremony. <i>(Wet weather venue is the engine shed on bottom road)</i>
2:50	Train returns to Clarence
3:24	Arrive at Clarence

Combined train and BBQ tickets (\$20 per adult and \$10 per child) must be booked with Don Fraser (02) 337 4867 or at Zig Zag by October 10th.

After that it's BYO with train tickets only (\$8 per adult, \$4 per child).

To attend ceremony only, travel on 2pm train from Clarence at the ticket only fare.

ALL WELCOME

ZIG ZAG RAILWAY CO-OP. LTD.

A Non-profit Community Advancement Society.
Registered under the N.S.W. Charitable Collections Act.

P.O.Box 33
Woodford, N.S.W. 2778.
Australia.

29th July, 1992.

Mr, Don Fraser

Dear Sir,

I refer to our discussion regarding Landmarking the Great Lithgow Zig Zag.

If you and your group are visiting another site in Lithgow on the morning of 18th October 1992, we suggest that you join our 12.15 p.m. service at Clarence for passage to Bottom Points. We could provide a BBQ on the way at Cockerton Place picnic ground (under No. 1 Viaduct) for \$20 per head (adult) or \$10 per head (children). This charge includes the return train fare. The BBQ would be steak, sausages and salads. Beer, wine, juices and soft drink would be included. After lunch, the group could walk or catch the next train to Bottom Points for the ceremony. Depending on the time taken for this event, participants could return to Clarence on the 2.00 p.m. or 3.30 p.m. service.

There is an alternative wet weather venue available.

We would need to know final numbers 7 days before the date.

Please let me know if the above proposal is satisfactory.

Yours Faithfully,



Michael Forbes. OAM. MCIT.
Chairman.



The
Institution
of Engineers,
Australia

BOARD OF ENGINEERING

Our Ref: 3/6/76

31 July 1992

Arrow Engraving & Foundry
123-129 Bernard Street
CHELTENHAM VIC 3192

Dear Sir

Supply, Manufacture and Delivery of Bronze Plaques

Please prepare designs/bromides for two engineering heritage bronze plaques as follows:

One 300mm (12") round National Engineering Landmark plaque in accordance with the attached illustration. Please note that the plaque is to have a border, previous ones supplied by you had a border of about 1/8" wide.

One National Engineering Landmark information plaque, rectangular 450mm x 300mm (16" x 12") with the wording shown in the attached illustration. Please note that this is similar to our usual Historic Engineering Marker plaque except that that title does not appear and the letters of the title "the Great Zig Zag, Lithgow" are the same size as "Historic Engineering Marker". This is shown in the attached diagram.

Please forward the copies of the bromides for the plaques to me for endorsement prior to manufacture.

Yours sincerely

R A Breen
Executive Officer

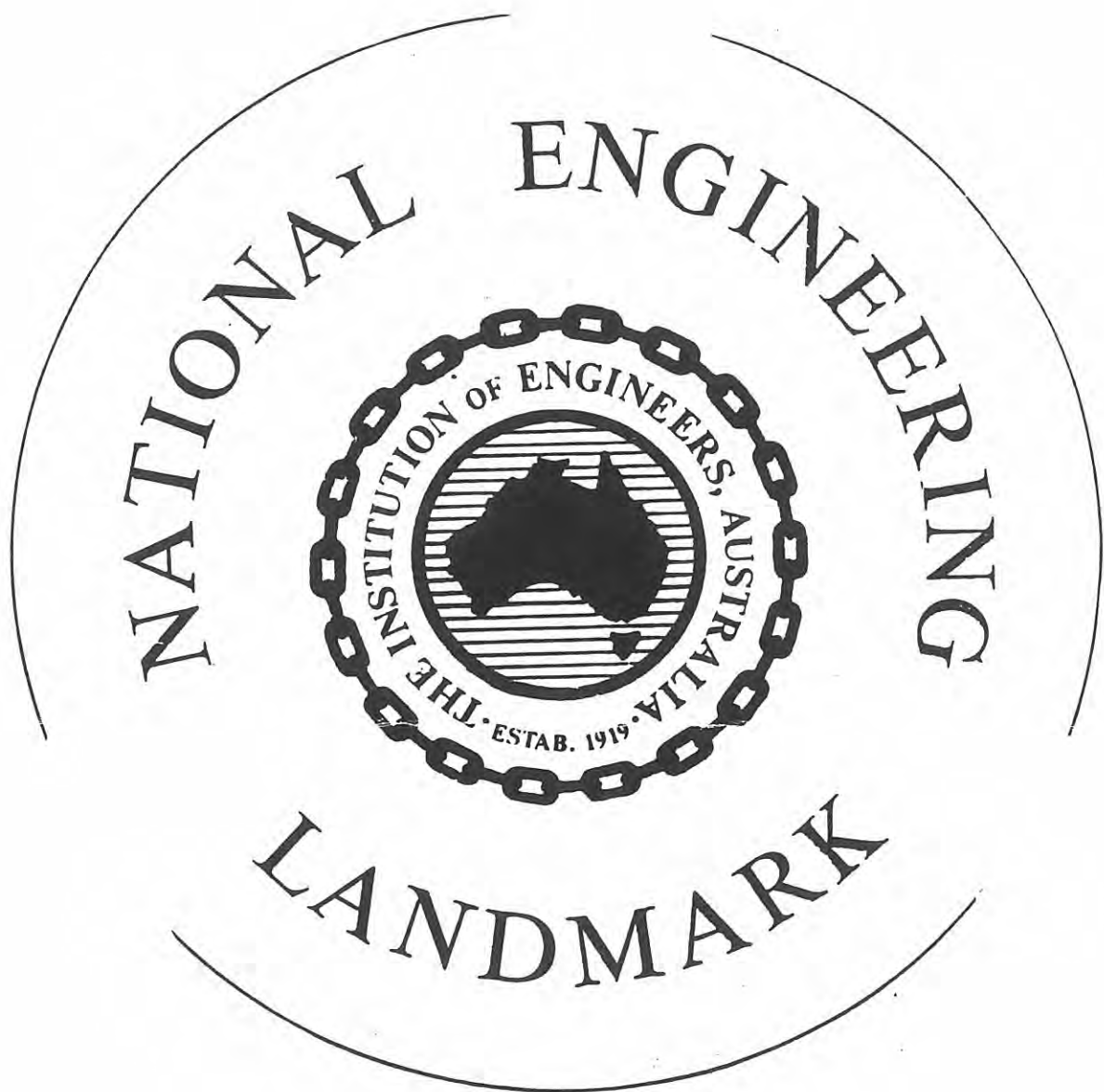
RAB:md

att.

cc D C Kemp
K McInnes
Don Fraser

Arrow.1tr

300 mm (12") round plaque



Facsimile:

& Date: 13 August 1992

Total no. pages
(including this one)

1

To: Arrow Engraving & Foundry (Attention George)

Fax number: ()# 553 2086

File: 3/6/75

From: Robert Breen, BOE Executive Officer

Subject: MANUFACTURE OF ZIG ZAG PLAQUE

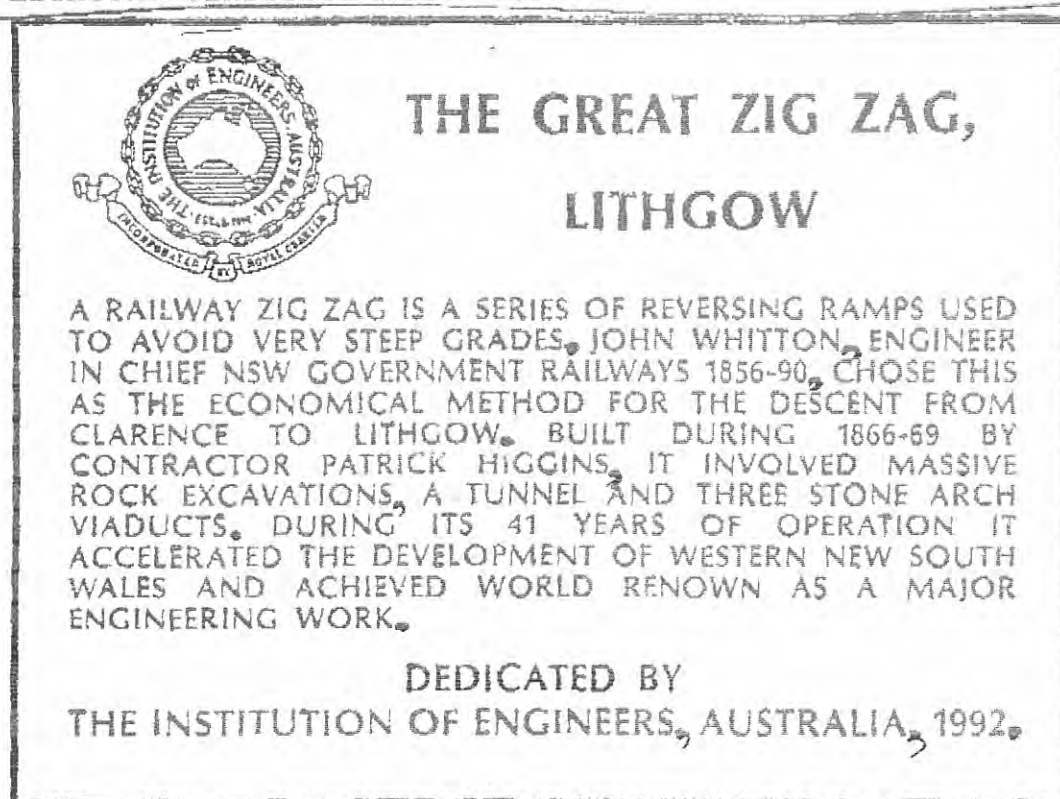


The design and wording for the Zig Zag plaque as illustrated in your fax of 11 August, has been approved.

There was some uncertainty about the punctuation as some commas and full stops in the fax were indistinct. The illustration below has these accentuated showing commas after the words:


ZAG, WHITTON, 1856-90, HIGGINS, EXCAVATIONS, ENGINEERS, AUSTRALIA, and full stops after:

GRADES. LITHGOW. VIADUCTS. WORK. 1992.



When these details are checked and found correct, please proceed with manufacture and deliver the plaque to:

Dr D J Fraser
14 Derby Street
VAUCLUSE NSW 2030.


R A Breen
Executive Officer

c.c. Don Fraser, Deane Kemp, Ken McInnes

The Great Zig Zag, Lithgow NEL

proposed wording by Bryan Homann for the information plaque

Reply from Don Fraser

My first observation is that the number of words equals 85, well above the preferred 70 and 9 more than some recent citations. We should try to stay with about 75 words OR 10 lines of text.

Referring to each line of Bryan's wording

Line 1 OK

Line 2 'Rugged terrain' is not a strong enough term. There is any amount of railways through rugged terrain where zig zags or spirals etc have not been used. The characteristic feature of zig zag country is precipitous, very steep mountainsides and/or sheer cliffs. The escarpments of the Blue Mountains are typical. Denied the money to build on a flatter grade with tunnels, Whitton chose the zig zag.

Omit 'TRAVERSE RUGGED TERRAIN' and
insert 'AVOID VERY STEEP GRADES'.

Line 3 OK

Line 4 The problem that faced Whitton was 'how to get **DOWN** from the high ground at Clarence to the valley floor at Lithgow'. Even today, it's the view looking down rather than looking up that impresses visitors and makes them marvel at Whitton's achievement.

Omit 'ASCENT FROM LITHGOW TO CLARENCE'
insert 'DESCENT FROM CLARENCE TO LITHGOW'

Line 5 OK

Line 6 It may be reasonable to assume that stone viaducts are automatically arches, but it is a matter of standard bridge terminology.

Insert 'ARCH' between 'STONE' and 'VIADUCTS'

Line 7 The railway over the Blue Mountains was the accelerator of development
Omit 'WAS A MAJOR CONTRIBUTOR TO THE'

Line 8 OK

Line 9 OK.

Therefore, my rewording of Bryan's text is as follows,

A RAILWAY ZIG ZAG IS A SERIES OF REVERSING RAMPS USED TO AVOID VERY STEEP GRADES. JOHN WHITTON, ENGINEER IN CHIEF NSW GOVERNMENT RAILWAYS 1856-90, CHOSE THIS AS THE ECONOMICAL METHOD FOR THE DESCENT FROM CLARENCE TO LITHGOW. BUILT DURING 1866-69 BY CONTRACTOR PATRICK HIGGINS, IT INVOLVED MASSIVE ROCK EXCAVATIONS, A TUNNEL, AND THREE STONE ARCH VIADUCTS. DURING ITS 41 YEARS OF OPERATION IT ACCELERATED THE DEVELOPMENT OF WESTERN NEW SOUTH WALES, AND ACHIEVED WORLD RENOWN AS A MAJOR ENGINEERING WORK.

81 words in 10 lines.

But if this proves to be too long, then the original wording of the nomination with its 75 words and 9 lines may be the best compromise.



THE UNIVERSITY OF NEW SOUTH WALES

SCHOOL OF CIVIL ENGINEERING



P.O. BOX 1 • KENSINGTON • NEW SOUTH WALES • AUSTRALIA • 2033

FACSIMILE TRANSMISSION

FAX STD: 02-663-2188

FAX ISD: 61-2-663-2188

TO: Rob Breen IE Aust

FROM: Don Fraser

SENDER'S TELEPHONE: _____

REF: _____

DATE: 12-6-92

FAX TO: 06 273 1488

TOTAL NUMBER OF PAGES INCL THIS ONE: 3

MESSAGE:

Here's my reply to Bryan Homann's
proposed wording for Zig Zag
plaque.

Don

Facsimile:

Date: 9.6.92

Total no. pages
(including this one)

2

To: Don FRASER
U OF NSW

Fax number: (02) 663 2188 File: 3/6/75

From: ROB BREEN

Subject: ZIG ZAG INFO PLAQUE
WORRING



The
Institution
of Engineers,
Australia

NATIONAL OFFICE

Don,

The attached for from Bryan Hammond
proposes changes to the Zig Zag
railway information Plaque.

May I have your comments please.

Question: is a Zig Zag a series of
reversing ramps? I thought the
train reversed up one and went
forward up the next.

Regards,

Rob

Depends if there is an extra
track at the ends to allow the
loco to "run around" to front
of train, hence loco always ^{leads} ~~pushes~~
the trains even though it is in
reverse. On Lithgow Zig Zag
this was the case, but pusher
locos were used at rear of train.

TO:

Mr R A Breen
Executive Officer
Board of Engineering
The Institution of Engineers, Australia
fax 06 273 1488

1.6.92

3/6/75

OM

Bryan Homann
Commemorative Plaque Sub-Committee
fax 08 349 7045

RE NEL Great Zig Zag Railway

I would submit the following wording, comprising some changes of my own, and a combination of the two suggestions previously noted.

AVOID STEEP
GRADES

DESCENT FROM
CLARENCE TO
LITHGOW.

A RAILWAY ZIG ZAG IS A SERIES OF REVERSING RAMPs USED TO TRAVERSE ^① RUGGED TERRAIN ^② ^③ JOHN WHITTON, ENGINEER IN CHIEF NSW GOVERNMENT RAILWAYS 1856-90, ^④ CHOSE THIS AS THE ECONOMICAL ^⑤ ^⑥ FOR THE ASCENT FROM LITHGOW TO CLARENCE. ^⑦ BUILT DURING ^⑧ BY CONTRACTOR PATRICK HIGGINS, IT INVOLVED MASSIVE ^⑨ ^⑩ EXCAVATIONS, A TUNNEL, AND THREE STONE VIADUCTS. ^⑪ DURING ^⑫ ITS 41 YEARS OF OPERATION IT WAS A MAJOR CONTRIBUTOR TO THE ^⑬ ACCELERATED DEVELOPMENT OF WESTERN NEW SOUTH WALES, AND ^⑭ ACHIEVED WORLD RENOWN AS A MAJOR ENGINEERING WORK. ^⑮

ARCH

12
21
29
39
47
56+1
68-6
78
84
-5
79

In the previous suggestions, the use of a zig zag to "traverse steep inclines" seems to be a form of contradiction; the zig zag in effect eases the incline by making it longer for the same vertical rise. Hence the suggestion to use the words "rugged terrain". As the zig zag is only a part of the whole railway, it is appropriate to transpose the words "railway" and "zig zag". We suggested changing the "descent" to "ascent", as most people using the GREAT ZIG ZAG will relate to difficulties getting up a rather than to getting down. This would not be so for novice drivers, who are only too aware of the inherent dangers of steep hills! In the final sentence, it may be a matter of debate as to whether contribution to NSW should come before its world significance; did it earn significance as a result of its operation, or had achieved the significance simply by being built.

Bryan Homann
1/6/92

file D:\BRYAN\ARTICLES\PLAQUE02.WPS

Chief Executive
J.D. Enfield AO, FIE Aust, CPEng



The
Institution
of Engineers,
Australia

NATIONAL OFFICE

15th May 1992

Mr. I.G. Bowie
Hon Secretary
Engineering Heritage Committee
Sydney Division
The Institution of Engineers, Australia
118 Alfred Street
MILSONS POINT NSW 2061

Dear Ian,

THE GREAT ZIG ZAG LITHGOW - NATIONAL ENGINEERING LANDMARK

I am pleased to formally advise you that your nomination of the Great Zig Zag for a National Engineering Landmark Award has been successful.

The Commemorative Plaque Sub-Committee of the National Committee on Engineering Heritage has given the nomination careful consideration and is drafting revised wording for the National Engineering Landmark information plaque. This will be forwarded to you in the near future for your consideration.

Faithfully,



Ken G. McInnes,
Chairman,
Commemorative Plaque Sub-Committee

cc. Chairman, Board of Engineering
Chairman, National Committee on Engineering Heritage



The Institution of Engineers, Australia

ESTABLISHED 1919 - INCORPORATED 1926
INCORPORATED BY ROYAL CHARTER 1938

SYDNEY DIVISION

ENGINEERING HERITAGE COMMITTEE

EAGLE HOUSE,

118 ALFRED STREET,

MILSONS POINT 2061

1

TELEPHONE: 929 8544

ALL CORRESPONDENCE
SHOULD BE ADDRESSED
TO:
THE SECRETARY,
BOX 138, POST OFFICE,
MILSONS POINT, 2061

Zig Zag Railway Co-op Ltd
P O Box 33
Woodford NSW 2778

30 October 1990

Dear Mr. McMahon,

Landmarking the Zig Zag Railway

On behalf of our Secretary and Committee members I welcome your ageement for us to honour this great engineering work with a landmarking plaque. I am confident John Whitton's grand scheme will receive the Institution's highest accolade, a NEL - National Engineering Landmark. It will be accompanied by an information plaque containing a 70-word citation answering these 4 questions - what is it? who did it? its engineering significance? and its social impact?

The procedure, now, is for this Committee to nominate this work to the National Committee for Engineering Heritage together with supporting documentation and the draft wording for the information plaque. We already have some material for this, but please send us any material you believe will enhance the submission. We will, of course, send you a copy of the submission for consideration.

A little later, representatives of our groups should meet on site to determine the location of the plaques and the nature of the ceremony. We look forward to your continued cooperation.

Yours sincerely,

I. G. Bowie (Secretary)
per Dr. Don Fraser, landmarking subcommittee.

The Chairman and Committee
Zig Zag Railway Co-op Ltd.
P O Box 33
WOODFORD, NSW 2778

16 July 1990

Dear Sir,

LANDMARKING THE GREAT LITHGOW ZIG ZAG

The Institution of Engineers, Australia has established a Plaquing Programme through which it honours historic engineering works. The attached booklet gives details of the programme and its achievements. The highest award is the round National Engineering Landmark plaque accompanied by a rectangular information plaque. The other award is the self-contained information plaque known as an Historic Engineering Marker.

Only the great engineering projects are designated National Engineering Landmarks and we have long been aware that the Lithgow Zig Zag fulfils all the requirements for it being so classified.

Now that your reconstruction work has been successfully completed and railway operations restored we would be honoured if you would agree to have this great work landmarked and cooperate in celebrating the event. Your ^eagreement in principle could be followed by a site inspection in order to decide the location of the plaques and details of the unveiling ceremony.

Yours sincerely,

D. J. Fraser (Dr), Landmarking Committee.